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The defensibility of Irish Tower Houses - A study.

Duncan Berryman

Tower-houses are often considered to be small castles, with similar defensive features and functions. They are small, single towers, often four or five storeys high and have a simple plan. They were most likely to have been accommodation for the smaller land-owning lordship, both Gaelic and Anglo-Norman. Tower-houses became more numerous from the late-fifteenth and early-sixteenth century; they mainly fell out of use after a few hundred years, but some remain occupied today. Tower-houses are found across Ireland, with concentrations in the southern Counties, the Pale - the area around Dublin - and southern County Down [see *CSGJ* 20, 7-9]. Similar buildings can be found in Scotland, mainly around the Borders, where they are called Peel Towers. The tower-houses of Scotland are similar in appearance, but differ in design.

Many scholars, such as Leask, Sweetman, Thomson and McNeill, have placed tower-houses alongside other castles in their respective studies. This exemplifies the position that tower-houses hold in the field of castle studies, being seen as a relatively minor area of study. It is true that they share many features with their larger counterparts, but they have a very dissimilar position in the social scale and must serve slightly different functions. The earliest work on tower-houses was carried out by Leask [1941, 75-91], this formed two chapters in his book of Irish castles. Similar work was carried out by Sweetman [2005, 137-174] in his book on Irish medieval castles. However, neither of these evaluated the effectiveness of the defence or living facilities. Terry Barry, of Trinity College, Dublin, considers tower-houses to be primarily defensive and has based his studies on an attempt to date them and to search for their origins [1987, 180-190].



Fig. 1. Castle Ward - Co. Down. Example of battlement-level box machicolation over the entrance.

Tom McNeill, of Queen's University Belfast, rejects the idea that tower-houses were primarily for defence [1997, 217-221], instead his studies have stressed the social factors and the architectural design of the towers. Research by Rory Sherlock [2007, 59] and Gillian Eadie [forthcoming] has attempted to investigate how the domestic functions of a tower-house would have operated. Recent research carried out at Queen's University, Belfast has taken a slightly different approach to the study of tower-houses [Berryman, 2008]. This research has taken a sample of tower-houses from across three counties of Ireland, Co. Down, Louth and Meath, rather than study every tower-house in one County. Instead of looking at the tower as a whole, this study focused on one important feature of the tower-house - the door - crucial to the defence of the tower. Being the only entry, it was central to the tower's social function and its every day life.

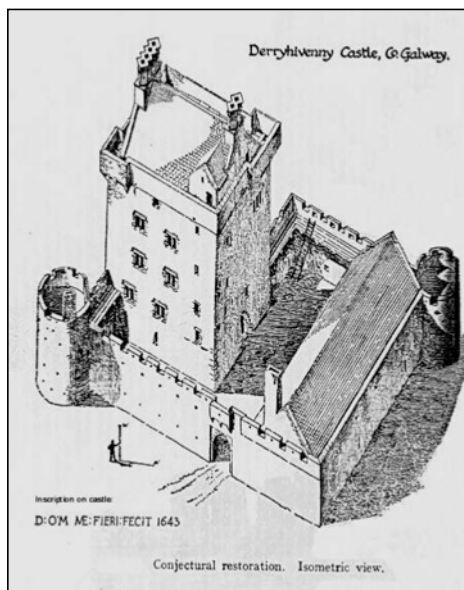


Fig. 2. Derryhivenny Castle c.1643. Conjectural reconstruction, after Leask, showing extent of the bawn.

The Bawn

The largest defensive feature that the tower-house could enjoy was a bawn wall. This was usually a three metre high wall that surrounded the tower to form an enclosure. This feature could have prevented attackers from gaining direct access to the tower-house, they would have to breach the wall first. A bawn wall serves the same purpose as a perimeter wall of a great castle; protecting the keep from enemy assault. However, extant bawns are quite rare; approximately only twenty-five percent of tower-houses still have evidence of their bawn's existence; this is similar to the number of mottes which have baileys attached to them [Mallory & McNeill, 1991, 262]. The lack of baileys in Ireland contrasts with their relative abundance in England, where eighty percent of mottes have a bailey [Mallory & McNeill, 1991, 262]; this may indicate a trend in Ireland for not creating an enclosure to protect subsidiary buildings. It is possible that more towers had bawns, but they have not been preserved;



Fig. 3. Audley's Castle, early C15. The south-east façade. Arch machicolation above the entrance in the south (left) turret, at ground floor level. Parapets lost.

either as a result of decay or of removal. Research by Aideen Burke at Derryhivenny (Fig. 2) has shown an extensive complex that has left no surface remains [see *CSGJ* 20, 50, & *The Derryhivenny Castle Project*]. A bawn wall would have been a very expensive construction project and it is possible that most lords could not afford to construct one to protect their property. Another explanation for the lack of bawns is that they were not needed; there may not have been enough violence to justify the expense of a bawn wall.

Arch Machicolation

A tower-house was usually designed with machicolation to protect the doorway. These are much like the machicolation found in great castles; they have similar functions and differ only in design. The arch machicolation is closest in design to those of great castles. It is formed from an arch between two projecting turrets on the front face of the tower. This design is the most effective at defending the doorway, but it leaves the defenders vulnerable to



Fig. 4. Audley's Castle c. C15. The south-east façade. Arch machicolation at parapet level above the entrance.

attack [Berryman, 2008, 36]. Arch machicolation is only found in three tower-houses in south-east County Down; namely Audley's (Figs. 3, 4), Kilclief (page 242) and Jordan's (Fig. 14) [McNeill, 1997, 213].

Box Machicolation & Bartizans

The most common design of machicolation is box machicolation. This is formed by projecting part of the exterior wall outwards on corbels [Berryman, 2008, 36]. The box machicolation provides a small opening above the doorway, giving the defender a smaller field of vision, but providing them with a good defence against attackers.

Machicolation is relatively common and is found across Ireland; examples include Castle Ward (County Down) (Fig. 1) and Clara (County Kilkenny). Some tower-houses, such as Aughnacore (Fig. 5) (County Galway) and Ballymalis (County Kerry) feature corner bartizans; these are similar in design and function to box machicolations, but are found at the corners of the tower-house at first or second floor level [Sweetman, 2005, 150 & 171]. Machicolation appears to be quite an effective form of defence, but possibly designed more for their image than their functionality, as they either constrain the defender or leave them open to attack.



Fig. 5. Aughnacore Castle c. C16. From the east. The rooftop machicolation is reconstructed, but the corner bartizans are original.

The yett or iron grate

Probably the most effective defensive feature of a tower-house was a yett; an iron grill or grate that could have been closed across the main door to protect it from attack and was secured with a chain [Sweetman, 2005, 140]. A yett performed the same function for a tower-house as a portcullis did for a great castle. It is very rare to find a yett still in place, such as at Cregg Castle (Fermore, Co. Cork) (Fig. 6); but a number of towers have evidence that one was once fitted to the main doorway (e.g. Athclare, Fig. 7). This evidence includes holes for the hinges in the dressed stone of the door jambs and a hole that passes through the wall for the chain to secure the yett closed. A yett could have protected the door from a battering ram attack by dissipating the force of the attack through the walls and preventing the ram from hitting the door. If the attackers tried



Fig. 6. Cregg Castle (Fermore, Co. Cork). Original yett. Image © David Newham Johnson.



Fig. 7. Athclare Castle, Co. Louth. Slot for the chain to close the yett.

to burn the door down, a yett could have prevented them from getting into the tower-house. However, research shows that approximately twenty percent of tower-houses were fitted with a yett [Berryman, 2008, 39]. This may suggest that tower-houses were not designed to be primarily defensive as it contrasts with evidence from great castles. Many keeps of the great castles, such as Colchester, Rochester [Toy, 1985, 70 & 76], or gatehouses of enclosure castles, such as Bodiam or Caernarfon [Toy, 1985, 196 & 216], had portcullises to prevent an attacker breaking through the doorway. If so many great castles are constructed with a portcullis, why are more tower-houses not provided with yetts? Tower-houses were constructed a number of centuries after the great castles, and one would assume that they would have copied the designs of the great castles. Contrary to previous research [Barry, 1987, 181], it is likely that this period of history saw chang-

es in social conditions and a reduction in the need for high security in homes [Simms, 1975]. Thus, a possible explanation for the lack of yetts is that not all tower-houses needed to be protected from serious attack.

Murder holes

Inside a tower-house, there were a number of 'defensive' features that could have been present. One feature that was taken directly from the design of great castles was the 'murder hole'. The majority of tower-houses have a 'murder hole' over the lobby, which is the equivalent of siting them over the entrance passage of the gatehouse. As in great castles, the 'murder hole' allowed the defenders to drop rocks or other projectiles on to their attackers who had broken through the main door [McNeill, 1992, 98]. However, the 'murder hole' is often very small compared to the area of the lobby; this means that it would have been difficult



Fig. 8. Audley's Castle, Co. Down. Murder hole exit.

for the defenders to hit their attackers, unless they stood directly under the 'murder hole'. One tower-house, Audley's Castle (County Down), may suggest a different function for the 'murder hole' (Figs. 8, 9). The 'murder hole' of Audley's Castle is situated above the door to the ground floor room, not near the main doorway; it is very small with a restricted opening. The implausibility of using this 'murder hole' for defence leads to the consideration of other functions, such as communication between the first floor and the ground floor, possibly between the lord and his porter concerning admittance to the tower-house. All murder holes provide only a restricted view of the lobby and thus other possible uses should be considered for them as well.

The Lobby & Draw-bars.

Almost all tower-houses have a number of doors opening off the lobby; usually these lead to a ground-floor room and the staircase; in some cases there is a third door leading to a guard room. Often there is evidence that these doors were securely closed with a draw bar attached to the inside of the door. These draw-bar dimensions are usually very similar to the main doorway. The ability to lock these doors indicates that there may have been someone inside the ground floor room, possibly a porter. The porter of great castles served a number of functions, not exclu-



Fig. 9. Audley's Castle. Murder hole entrance along the spiral staircase.

sively security [Simpson, 1992, 319]. The control of the doorway and access to the castle was the main role of the porter, but he would also have looked after the castle when the lord was not present [Simpson, 1992, 321]. The porter may not have been so important in a tower-house, but someone needed to open the door and control access to the lord's accommodation.

The Defensibility Test

Very few academics have questioned the physical strength of the tower-house door itself. It is either assumed to be too weak to withstand assault or strong enough to hold out during a siege. Recently, an experiment was carried out by researchers at Queen's University Belfast to find out whether a tower-house door could have survived an attack by battering ram or by fire. It was possible that all the force of the battering ram would have been dissipated through the walls of the tower-house and all the heat from the fire would escape upwards.



Fig. 10. Queen's University battering ram team starting work. Below: Fig. 11. Fire just lit.

To do this, two doorways were built, one to test the battering ram and the other to test fire. The doors were made of 30mm thick oak planks, which were attached to bracing planks with bolts. The door was hinged by projecting the ends of the first plank into holes in the ground and lintel. The doorways were constructed of concrete blocks and mortar and were built to measurements taken during survey work. One door was securely closed by a draw bar, this was 80mm square made of solid oak and a battering ram was formed from an ash tree. Wood was stacked in front of the other door to test the fire.

The wood in front of the door that was to test the burning was ignited with newspaper and matches and more wood was added as the fire grew. In medieval times, the fire was probably lit away from the tower and then brought to the door. The door quickly became very blackened and the lintel reflected the heat back onto the door. After about twenty minutes, the fire had begun to penetrate through weaknesses in the door; eventually the door then began to burn on its own. It took forty

minutes for the door to burn down completely.

Despite their lack of experience in using a battering ram, the team quickly learnt how to use the ram. They succeeded in breaking the draw bar within the first ten hits. However, the broken draw bar prevented the door from opening, as it was still in position and it took a total of fifty-four hits to knock the door out of the doorway. The whole ramming exercise lasted about five minutes, this included two changes of the team; an experienced team

could probably have managed it in approximately three minutes.

This experiment shows that tower-houses could not have withstood an organised attack from a team of experienced raiders and a tower-house's defensibility was not as effective as its apparent defensive features might suggest. The best defensive features that a tower could have





Fig. 12. Above: The battering ram team breaking through after 5 minutes.

Fig. 13. Below: The oak door burnt down completely after about 45 minutes.

been built with were a yett or a first floor entrance, both are found in Irish tower-houses. Yetts were rare, but are found in approximately one quarter of all tower-houses [Berryman, 2008, 39]. First floor entry is mainly restricted to tower-houses in the south-west corner of Ireland [Samuel, 1998, 111-7]. Examples include Leamcon and Kilcoe castles built between 1427 and 1470 and Dunalong, built between 1460 and 1500; Bunratty is also an example of a very large tower-house with a first-floor entrance built after 1450 [see CSGJ 23, 89-98]. A first floor entry would have made it impossible for attackers to use a battering-ram against the door; it could also have made lighting a fire very difficult. If the stairs were made of wood, they could have been destroyed if the tower was going to be attacked, thus preventing the attackers reaching the doorway. If the attackers could break the door down in such a short time, then these are the most important defences, all the others are of little use and only for decoration and display.

Conclusions

These results have implications for castle studies in general. The draw-bar can only

be viewed as essentially a device for closing the door to keep the elements out; it was not a significant defensive feature. An 'evolution' of defensive features can be seen in tower-houses. The most basic design is a door and a draw bar; this combination would have been ineffective against an attack. The next step would be to defend the door with a yett or portcullis. This option would have reduced the effect of a battering ram and allowed a door to hold out for much longer. The most effective means of inhibiting an attacker from gaining access was to place the doorway on the first floor. A flight of stairs would have prevented the use of a battering ram against the door and thus stopped an attack.

Tower-houses have many features that appear defensive in nature, but they



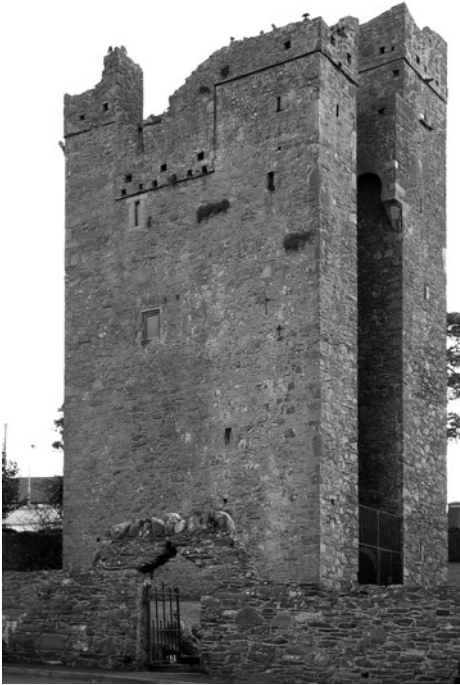


Fig 14. Jordan's Castle, near Ardglass, Co. Down. Third example of the 'arch machicolation'.

could only have been used to defend the tower as a last resort. This experiment has shown that a simple, and typical, tower-house was not designed to be exclusively or primarily defensive; this is supported by the lack of effective defensive features, such as a yett. Therefore, although tower-houses appear similar to great castles, they are not the same and should be studied in isolation, with different research objectives and methods of study.

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Video footage of this experiment can be viewed at: www.qub.ac.uk/schools/gap/Education/ArchaeologyandPalaeoecology/StudentAchievements

Bibliography

Barry, T., 1987, *The Archaeology of Medieval Ireland*, London: Methuen & Co.

Berryman, D., 2008, *Doorways to Irish Tower Houses: a study*, BA Dissertation, Queen's University Belfast.

Berryman, D., 2009, 'Home security: how strong was a Tower House door', *Archaeology Ireland* 23 [Summer 2009], 8-10

Eadie, G., forthcoming, *The functions and classification of tower houses*, PhD thesis, Queen's University Belfast.

Leask, H.G., 1941, *Irish Castles and Castellated houses*, Dundalk: Dundalgan Press.

Mallory, J.P. & McNeill, T.E., 1991, *The Archaeology of Ulster*, Belfast: Institute of Irish Studies, QUB.

McNeill, T. E., 1992, *Castles*, London: English Heritage

McNeill, T. E., 1997, *Castles in Ireland*, London: Routledge

Thompson, M.W., 1987, *The Decline of the Castle*, Cambridge: Cambridge University Press.

Samuel, M., 1998, 'A Tentative Chronology for Tower Houses in West Cork', *Journal of the Cork Historical and Archaeological Society* 103, 105-24

Sherlock, R., 2007, 'The Social Environment of the Irish Tower House', in *The Castle Studies Group Journal* 20, 59

Somerset Fry, P., 1996, *Castles of Britain and Ireland*, Newton Abbot: David & Charles.

Simms, K., 1975, 'Warfare in the Medieval Gaelic Lordships', in *The Irish Sword* 12, 98-108.

Simpson, G.G., 1992, 'Claves Castri: the role of the gatekeeper in Scottish Medieval Castles', *Château Gaillard* 15, 319-324

Sweetman, P.D., 2005, *Medieval Castles of Ireland*, Cork: The Collins Press.

Toy, S., 1985, *Castles*, New York: Dover.